



## New Zealand longfin eel

### *Anguilla dieffenbachii*

The New Zealand longfin eel is an iconic species and is highly valued for recreational and cultural purposes. There is also a commercial fishery for these eels. Maori hold a significant interest in both commercial and non-commercial uses of the species.

The Ministry of Fisheries (MFish) is committed to ensuring that our use of this fishery by any sector is sustainable over the longer term.

Fishery interests and the Government have been concerned that the fishing levels experienced in the 1970s and 1980s were not sustainable. Progressive action has been taken since to improve the overall status of longfin stocks.

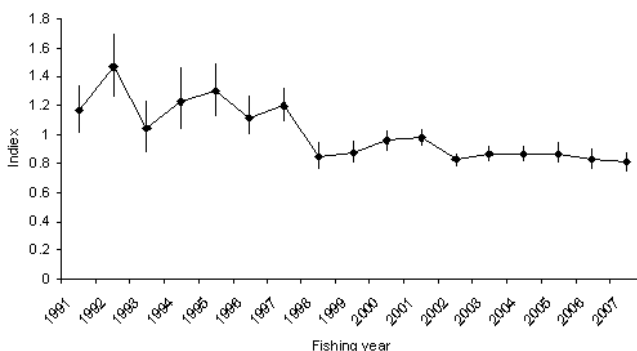
Commercial catch limits for longfin eels in the North Island have been reduced and are now set at a similar level to the non-commercial catch allowances for this fishery.



### Status of the stocks

#### Stock Assessment

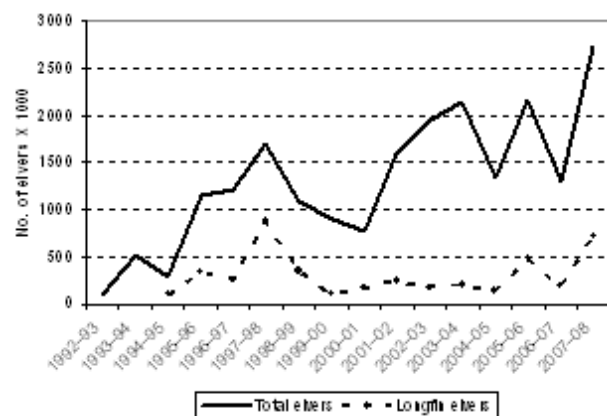
The status of shortfin and longfin eel stocks are monitored by observing trends in Catch-Per-Unit-Effort (CPUE) made by commercial fishers. The main North Island stocks showed general declines in CPUE from 1990/91 to 2003/04. The South Island stocks showed relatively stable or decreasing longfin CPUEs from 1990/91 to 2000/01, with increases being reported from 2001/02 to 2005/06. These trends are updated every few years as information is collected and analysed.



Longfin eel Catch-Per-Unit-Effort in the Waikato Fishery.

#### Recruitment

The number of longfin eel elvers migrating upstream is monitored at a number of sites across the country. Elver numbers in 2007/08 at some of the main monitoring sites were among the highest recorded in the past 16 years. The success of longfin elver recruitment from one year to the next may be more reliant on favourable ocean currents than simply the number of offspring spawned in the South Pacific Ocean.



Trend in the number of longfin elvers and total elvers recorded at the Karapiro Dam, Waikato River, one of the main elver monitoring sites.

## Current management issues

Longfin eels are thought to be more susceptible to overexploitation than shortfin eels. Over the past decade, there has been more awareness of the need to improve the state of New Zealand's longfin eel stocks.

Eel stocks were introduced into the quota management system (QMS) between 2000 and 2004, and commercial catch limits set for these fish stocks. These catch limits were set lower than previous years' average catches. The industry underwent significant rationalisation during this time, which led to a reduction in fishing effort and processing capability.

Associated measures included the closing of some major waters to commercial fishing; and extending the application of the commercial maximum size limit to cover the whole country (to stop catch of breeding females).

The effect of all these measures led to further rationalisation of the industry – particularly of catching and processing capacity. A combination of this and market conditions have meant that commercial catches of longfin eel in the 2007/08 fishing year did not reach the catch limits set for them.

Ministry of Fisheries scientists and managers believe commercial catch cuts and other measures introduced to date would have reduced the risk of the longfin fishery's further decline.

It is estimated that around 30 per cent of available longfin habitat in the North Island and 34 per cent in the South Island is now either in waters where commercial fishing is banned or in waters that are rarely or never commercially fished. These areas are likely to contribute a significant portion of the fishery's current and future spawning stock.

MFish continues to review the state of this fishery, using the latest science information and will take further management action as needed. The management strategy has been to limit the use of the fishery so that eel stocks improve over the medium term, particularly for non-commercial fishery interests.

### South Island catch limits and allowances (tonnes) for eel management areas in the 2008/09 fishing year

*Note that catch limits and allowances in the South Island do not currently differentiate between longfin and shortfin eel catch.*

Management area	Total Allowable Commercial Catch	Recreational allowance	Customary allowance
ANG11	40	1	10
ANG12	43	1	11
ANG13	122	3	31
ANG14	35	<1	9
ANG 15	118	3	30
ANG 16	63	2	16



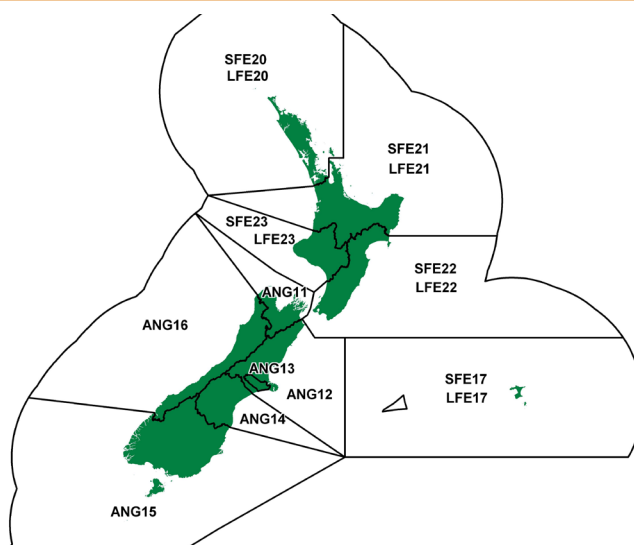
## Biology

The longfin eel is endemic to New Zealand. These eels are generally long-lived and breed only once before they die. Growth rates are highly variable, with female longfin eels commonly migrating to their spawning grounds at ages ranging from 27–61 years.

When they reach maturity, longfin eels swim out to sea and then travel to their spawning grounds, thought to be somewhere east of Tonga. Dams and other barriers can stop these migrating eels from reaching the sea and their spawning grounds.

Eel larvae are transported from the spawning grounds to New Zealand via the South Equatorial Current. The larvae then turn into juveniles called elvers that swim up the mouths of rivers and streams from August to November. The upstream migration of these juveniles distributes eels throughout streams, rivers and lakes. Dams, culverts and waterfalls can stop the upstream migration of these eels.

Longfin eels prefer stony rivers and often travel far inland to river headwaters and high country lakes.



### North Island and Chatham Islands (LFE17) catch limits and allowances (tonnes) for longfin eel management areas in the 2008/09 fishing year

Management area	Total Allowable Commercial Catch	Recreational allowance	Customary allowance
LFE17	1	1	1
LFE20	19	8	10
LFE21	32	10	16
LFE22	21	5	6
LFE23	9	9	14